Eco-Human Health Subgroup meeting – Risk Assessment Scale and other issues

April 3, 2006, at the Olympic Club in Centralia WA

DRAFT Meeting summary

Meeting participants

Eric Blischke, EPA
Chip Humphrey, EPA
Joe Goulet, EPA
Dana Davoli, EPA
Jim Anderson, DEQ
Jennifer Peterson, DEQ
Mike Poulsen, DEQ
Rob Neely, NOAA
Ron Gouguet, NOAA
Rose Longoria, Yakama Nation
Tom Downey, Confederated Tribes of the Siletz Indians
Patti Howard, CRITFC
Valerie Lee, EI
Chris Thompson, EI
Jean Lee, EI
Aron Borok, EI
Bob Gensemer, Parametrix
Carrie Smith, Parametrix

Facilitator: Mikell O'Mealy, DEQ

Purpose of the meeting

- The primary purpose of the meeting was to discuss the concepts proposed in the LWG's 3/15/06 ERA Decision Framework document (including spatial scale and other concepts) *to identify issues, develop alternatives and agree on direction to the LWG*, in preparation for the 4/11/06 ERA meeting with LWG.
- To set the context for our discussion about the LWG ERA Framework document, the group talked about the questions that we need to address internally to determine the "on-the-ground" scale of the ERA and HHRA and next steps to answer those questions. In addition, the team looked at examples of how scale has been addressed at other sites and the tools that are available for us to use in Portland Harbor.

Note taking for meetings

The team agreed that as facilitator, Mikell O'Mealy will be responsible for providing the official summary of the meeting, including areas of agreement and disagreement, action items and next steps, based on flip chart notes taken during the meeting. Mikell will provide the draft meeting summary to the team for review (via email), make changes based on team member comments, and send the final meeting summary back out to the team. During the meeting, Mikell will check in with participants to confirm agreement with any consensus positions developed by the team, and participants are responsible for voicing any disagreement they may have with the consensus positions the team develops.

Notes taken by Aron Borok during the meeting are for internal tribal use, but are available to other members of the team upon request.

Primary questions we need to address to determine the scale of the ERA and HHRA

The LWG ERA Framework document proposed high-level conceptual scales for the ERA (i.e., site-wide, area-specific and location-specific). More evaluation/discussion is needed to determine whether these are the appropriate scales and how they will be applied on-the-ground. Bob Gensemer presented an outline of questions and/or issues that we'll need to address in determining scale. Team members discussed the list and next steps, and agreed that we need to resolve questions about scale as soon as possible to (1) inform our development of Round 3 Field Sampling Plans and (2) determine whether we have adequate data to conduct the risk assessments.

Follow-up: EPA and Parametrix will determine how much work is involved in answering the questions that Bob outlined, and decide on a timeline for doing that work so that the team can make decisions on scale in the near future.

How scale has been addressed at other sites, and tools available for us to use here
Ron Gouguet gave a short presentation on how the issue of scale has been addressed at another Superfund site and what tools are available for our use in Portland Harbor to display data. The team discussed the tools and how they might apply to our work here.

Proposed concepts in the LWG's ERA Framework – issues to raise in the 4/11/06 meeting
The team discussed the LWG's 3/15/06 ERA Decision Framework document and agreed upon the following statements and issues to raise at the 4/11/06 ERA Framework meeting with LWG.

Aspects of the Framework document that we like and/or agree with

- The LWG has made a good effort to put forth a framework that is largely based on existing EPA guidance for conducting ERAs.
- We agree with the LWG that risk to ecological receptors should be based on scales that are ecologically relevant (e.g., mobility and home range). Additional discussion is needed to determine how, exactly, we define "ecologically relevant scales."
- The decision framework does a good job of presenting, in general, (1) LWG's proposed approach for this site, (2) the components of the framework and how LWG proposes to apply the various lines of evidence to determine risk for a number of receptors of concern, and (3) the ways in which the various models are proposed to be utilized as LOEs in assessing risk.

Concepts, statements, ideas or approaches in the Framework document that we disagree with; proposed alternatives

- *Empirical data needs to be the primary LOE for the benthic community*
  EPA/partners are evaluating the benthic predictive approach now, and we are not sure of its utility in assessing risk. We know that the benthic approach will not answer all of our questions about risk to the benthic community, and depending on our evaluation, we may find that it is not suitable to answer many or any of our questions. Thus, we may need to rely more heavily on empirical data and other LOEs for assessing risk to the benthic community.

- *Measurement endpoints should be weighted using criteria that evaluate the relevance to the assessment endpoints for use in the ecological risk assessment*
  It appears that the LOEs in Table 1 are weighed toward relevance of media (e.g. sediment) proposed to be the focus of the feasibility study. Instead, LOEs (or measurement endpoints) need to be weighted relative to each other for each assessment endpoint for the purposes of evaluating different lines of evidence for the risk assessment. This may vary depending on the properties of the chemical class under consideration. For some measurement endpoints, water (surface and/or transition zone) comparisons to AWQC or other threshold levels should be the primary LOE for assessing risk, and risk from water exposures will be evaluated for those receptors as appropriate. EPA/partners will present an example matrix that shows how different measurement endpoints should be considered in the risk assessment taking into account assessment endpoint, receptor, each COPC group (e.g., metals, PAHs, bioaccumulatives), and each exposure pathway. This approach needs to be used to weigh LOEs for all receptors of concern. Criteria for the weighing evaluation should also be discussed.

- *Separating the use of LOEs for the risk assessment and feasibility study*
  The LWG needs to clarify how LOEs will be used for the risk assessment, separate from the feasibility study and/or future monitoring. EPA/partners request that all FS and monitoring related information be removed from sections 1 through 4 of the ERA Decision Framework document to eliminate confusion about the use of LOEs for the risk assessment and FS. Similarly, Table 1 needs to reflect only how LOEs will be used for the risk assessment; currently, Table 1 appears to contain some FS-related uses (i.e., the document states that primary LOEs will be used to develop cleanup numbers while secondary LOEs will not, and Table 1 implies that risk to the benthic community from water exposures will not be assessed, focusing only on sediment). EPA/partners acknowledge that LOEs will probably be weighted differently for the risk assessment and the FS.

- *Plan for other approaches to reduce uncertainty in modeling efforts*
  The ERA Decision Framework relies to varying extents on modeling for most LOEs. EPA/partners have a significant amount of uncertainty about the ability of these models to accurately predict results (and the LWG references this uncertainty in their acknowledgement of guiding assumptions). This is certainly the case with the benthic predictive model, the food web model, and, possibly to a lesser extent, the BSAF model. Pending review and approval of these models, we need to plan for the use of other approaches (e.g., logistic regression, mean ERM quotients, other food web modeling efforts, additional benthic toxicity sampling) to reduce uncertainty. LOEs based on models with high levels of uncertainty will be given a low weight, or may not be used at all if they fail to meet minimum standards for the modeling effort.

- *All areas of the site will be considered potential habitat for ecological receptors*
  EPA/partners are concerned that areas of unexpected habitat (e.g., seawalls, scoured areas) could be excluded from the risk assessment. All areas of the site should be considered potential habitat for ecological receptors of concern; the ecological risk assessment should not be limited to only certain parts of the site. Following the risk assessment, differences in habitat areas will be addressed as part of the risk management process. In addition, it appears that LWG is defining scale based on habitat, rather than home range. EPA/partners are considering how home range should be used in determining the appropriate risk assessment scale for some receptors, acknowledging that the use of home range instead of habitat area could change the LWG's definition of scale significantly for some receptors.

- *EPA/partners are evaluating appropriate scales for some receptors*
  EPA/partners are doing additional evaluation to determine the appropriate scales for assessing risk to some receptors (i.e., bass, lamprey, other fish), and will provide direction on this soon.

- *Revise Table 1 to reflect direction from EPA/partners*
  EPA/partners expect that Table 1 will be revised to reflect direction from EPA/partners in the 12/2/05 data gaps memo and the 2/17/06 statement of work document.

- *Decision Framework for the Human Health risk assessment needs to be discussed*
  EPA/partners have not yet addressed issues related to a decision framework for human health; more discussion on this is needed.

<u>Aspects of the Framework document that require additional definition; proposed clarification</u>

- *Defining how exposure data will be selected and used in risk calculations*
  The ERA Decision Framework lacks detailed discussion of exactly how exposure data will be selected and used in risk calculations. The general scale approach seems valid, but different

exposure pathways/LOEs (especially dietary vs. tissue) will require different kinds and numbers of calculations for each receptor. This needs to be evaluated and determined through trial calculations to evaluate the implications of different exposure scale choices. Main concerns include:

- How will habitat and/or home range be used to select specific exposure areas and, hence, data used for calculating EPCs? Proposals were made in LWG's 2004 approach/tech memo, but they were conservative, and covered most of the ISA for most fish receptors (probably not realistic).
- Given the resolution of our first concern, how many HQs will be calculated for each receptor, and if more than one for a given receptor (e.g., small-scale receptors), how will final risk calculations be done?
- How will dietary vs. tissue vs. water pathways be handled?
- What calculation statistics will be used to derive EPCs? Again, proposals were made in LWG's 2004 approach/tech memo--does the group think these are valid, or should alternatives be proposed?

Next steps

Follow-up items from the meeting are summarized below.

- The Eco Team will develop a matrix mentioned above (or examples of the matrix for one or more receptors) to share with the LWG on or before the 4/11/06 meeting.
- EPA and Parametrix will determine how much work is involved in answering the questions related to scale (outline by Bob), and decide on a timeline for doing that work so that the team can make decisions on scale in the near future.
- The Portland Harbor Managers group will consider what the next steps will be for the ERA Decision Framework document and what the vehicle will be for documenting the details of how we'll do the ERA.
- Topics or questions identified by team members, to be addressed in future meetings include
  - TRVs – Chris Thompson raised specific questions: (1) Why are some of Burt's TRVs different than some TRVs listed in the PRE? (2) Should those TRV values that Burt has that aren't in the PRE be used for screening? (3) Since the relative sensitivity of lamprey and sturgeon is unknown, we don't know how appropriate or protective it is to use existing TRVs for lamprey.
  - EPCs
  - BSAFs
- Our 4/3/06 discussion focused almost exclusively on the ERA, and the team needs to have a similar discussion for human health. EPA/partners have not yet addressed issues related to a decision framework for human health.
- *Tentative* upcoming meetings include
  - April 11 – meeting with the LWG to resolve issues related to the ERA Decision Framework document; time 10 a.m. – 3 p.m. for the technical meeting, 3 p.m. – 5 p.m. for the managers meeting; location Portland, building/room TBD
  - April 18 – meeting with the LWG to discuss the CSM
  - April 25 – meeting with the LWG to discuss the FS
  - May 2 – meeting with the LWG to discuss the food web model